

Assessing Psychopathic Attributes in a Noninstitutionalized Population

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The present study examined antisocial dispositions in 487 university students. Primary and secondary psychopathy scales were developed to assess a protopsychopathic interpersonal philosophy. An antisocial action scale also was developed for purposes of validation. The primary, secondary, and antisocial action scales were correlated with each other and with boredom susceptibility and disinhibition but not with experience seeking and thrill and adventure seeking. Secondary psychopathy was associated with trait anxiety. Multiple regression analysis revealed that the strongest predictors of antisocial action were disinhibition, primary psychopathy, secondary psychopathy, and sex, whereas thrill and adventure seeking was a negative predictor. This argues against a singular behavioral inhibition system mediating both antisocial and risk-taking behavior. These findings are also consistent with the view that psychopathy is a continuous dimension.

It has been argued that neurological deficits predispose individuals to psychopathy (cf. Fowles, 1980). Lykken (1982) advanced the idea that relative fearlessness is a strong predictor of psychopathy. His Harm Avoidance scale was developed to assess this presumed trait (cf. Tellegen, 1982). Fearlessness is similar to the deficit in the *behavioral inhibition system* (BIS) Gray (1985) posited, which would be associated with a low level of trait anxiety. However, Rotenberg (1978) argued that what is called "psychopathy" consists of differential insensitivity acquired by desensitization. Degrees of such insensitivity may well be reflected in interpersonal attitudes that can be assessed by self-report. According to this model, psychopathy would not necessarily arise from a biological predisposition. It should be noted that such desensitization would be expected to result in lower anxiety without lower anxiety being an initial predisposition (cf. Levenson, 1992). Levenson (1992) recently argued that psychopathy is not a disorder characterized by a deficit in neurological systems that mediate anxiety or harm avoidance but rather that a pattern of intrinsically antisocial behavior is based on judgments concerning the relative importance of one's own wishes and the rights and well-being of others. In this model, social learning, rather than biology, plays the leading role in influencing behavior, and influence is not treated as equivalent to causality. Rather, at some point a choice is made to engage in antisocial behavior on the basis of judgments that typify psychopathic thinking, and the repetition of such behavior makes future antisocial behavior increasingly less aversive.

In a psychometric examination of the BIS model, Levenson (1990) compared antisocial drug unit residents with rock climbers and decorated heroes from police and fire departments. The drug unit residents were characterized by antisocial traits as well as by high emotional arousability, but *not* by adventurousness; rock climbers, however, did score high on the Thrill and Adventure Seeking subscale of the Sensation Seeking Scale (Zuckerman, 1979) and low on a measure of emotional arousability but scored low on the antisocial trait dimensions. Heroes scored near the norms on most scales and scored well below the norms on thrill and adventure seeking and experience seeking (Zuckerman, 1979). This suggested that, at least in this population of heroes, there was no "heroic" personality trait held by some to be akin to psychopathy (Lykken, 1982). On the Boredom Susceptibility subscale, the drug unit residents scored much higher than the heroes and somewhat, but not significantly, higher than the rock climbers, whose mean score was almost identical to that of the normative sample. Antisocial drug unit residents scored significantly higher than rock climbers or heroes on the Disinhibition subscale of the Sensation Seeking Scale (Zuckerman, 1979). The latter two group means were actually more than a point below that of the normative sample. It should be noted that the Disinhibition subscale assesses *social* disinhibition, not the disinhibition of behavior entailing serious physical risk. This pattern of findings is incompatible with a single brain system mediating behavioral inhibition such as that hypothesized by Gray (1982). These results are therefore not consistent with the hypothesis of a unitary mechanism underlying intentional physical risk taking, heroism, and psychopathy. MacAndrew and Steele (1991) also found no relationship between primary psychopathy and low scores on a scale developed to assess BIS. Their findings are inconsistent with Gray's (1987) explicit identification of low trait anxiety (with anxiety understood to be the experienced symptom of BIS activation) with primary psychopathy.

A complicating factor is the distinction between primary and secondary psychopathy, first proposed by Karpman (1948). He held primary psychopaths to be callous, manipulative, massively selfish, and routinely untruthful, and he believed that sec-

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ondary, or neurotic psychopaths engage in antisocial behavior under the influence of emotional disorder—typically manifested as extreme impulsivity—whereas pure primaries give no evidence of such disorder. It is possible that the drug unit residents in the above study were secondaries rather than primaries, although pure types of either may be rare. Karpman (1948) argued that only primary psychopathy should be considered true psychopathy. However, it may be more likely that secondaries or those with a strong secondary component, because of their emotional disorders, will come to the attention of the authorities or mental health professionals. In a noninstitutionalized sample a more continuous mixture of primary and secondary traits might be expected. In that case, trait anxiety would be expected to distinguish secondary from primary psychopathy.

The most promising empirical approach to the two-factor model of psychopathy is Hare's diagnostic Psychopathy Checklist (PCL), which has been developed in populations of prisoners (Hare, 1991; Hare & Frazelle, 1980). The two factors are quite compatible with the distinction made by Karpman (1948), even though virtually all imprisoned psychopaths score high on both dimensions. Although almost all imprisoned psychopaths are classified with antisocial personality disorder (APD) as assessed by the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987), only a minority (20%–30%) of those with APD qualify as psychopaths on the revised PCL (PCL-R; Hare, 1991). Hare has pointed out that this is due in part to the strong relationship between what is assessed in APD diagnosis and Factor 2 of the PCL-R, whereas most of those who are classified with APD do not evidence Factor 1 (Karpman's primary psychopathic) traits. Therefore, a two-factor self-report instrument for use in noninstitutionalized populations is desirable. If underlying neuroticism is the distinguishing feature of secondary psychopathy, trait anxiety scales should be effective in distinguishing secondary from primary psychopathy.

If the dimensions of psychopathy are continuous, they should be demonstrable in a normal, noninstitutionalized sample with the understanding that only those who exhibit a large number of the traits that characterize the construct would actually be called psychopaths in a forensic context. The purpose of the present study was to obtain preliminary information on the development of scales designed to assess psychopathic or protopsychopathic attitudes and behavior in such a sample. We hypothesized that interpersonal styles and philosophies that typify primary and secondary psychopaths would be detectable in a population of American university students in which few individuals would be deemed psychopaths. This would be consistent with the continuous model of the psychopathy construct. The matter of greatest interest when assessing psychopathy in an unselected population is the presence of primary psychopathic attitudes in people who are unlikely to be clinically diagnosed as psychopathic (cf. Levenson, 1992). We also hypothesized that considerable differences in actual antisocial behavior would be found in such a population, although most such behavior would not lead to arrest.

Antisocial action is clearly not sufficient to identify the construct of psychopathy. Almost all prison inmates, for example, would be classified as antisocial, but only a minority of them have exhibited psychopathy as assessed by the PCL (cf. Hare,

1991). Therefore it is important to construct items for primary and secondary psychopathy that are as similar as possible to those that are used by trained observers to describe a psychopath, such as those found in the PCL (cf. Harpur, Hare, & Haks-tian, 1989). Such descriptors include an inclination to lie, lack of remorse, callousness, manipulateness (Factor 1, or primary), impulsivity, intolerance of frustration, quick-temperedness, and lack of long-term goals (Factor 2, or secondary). If endorsement of such items is associated with higher levels of antisocial action, the psychopathy construct would receive a measure of validation in a nonprison population that to some degree parallels that obtained among prisoners.

We further hypothesized, on the basis of previous work, cited above, that no relationship would be found between physical adventurousness (implying relative fearlessness) and psychopathy in this population; that the sensation seeking components that would be related to psychopathy are disinhibition and boredom susceptibility—that is, that discriminant validity can be established for the psychopathy construct as distinct from global sensation seeking; and that state anxiety would be positively related to secondary psychopathy but unrelated to primary psychopathy. We hypothesized that the scales assessing psychopathy as a method of interpersonal relations and the Disinhibition subscale of the Sensation Seeking Scale would be the best predictors of antisocial action.

Method

Sample and Procedure

The sample consisted of 487 undergraduates in psychology classes at the University of California at Davis who participated for course credit. Of 481 respondents who reported their sex, there were more than twice as many women ($N = 346$) as men ($N = 135$). Ages ranged from 17 to 49 years with mean of 20.82 years ($SD = 3.25$). N s for individual scales varied slightly because of missing data.

Measures

The primary psychopathy, secondary psychopathy, and antisocial action scales were developed to assess the two forms of psychopathy recognized in the literature and to assess their relationships to prosocial and antisocial behaviors chosen for their relevance to university students. The psychopathy assessment items were designed to produce, by means of a self-report procedure, two factors similar to those produced by the Hare Psychopathy Checklist (cf. Harpur et al., 1989), a rating scale designed for the identification of psychopaths on the basis of clinical interviews and collateral information. The primary psychopathy items were created to assess a selfish, uncaring, and manipulative posture toward others, and the secondary psychopathy items were designed to assess impulsivity and a self-defeating lifestyle. The psychopathy items were constructed using an antisocial-desirability manipulation, which consisted of phrasing them in a way that does not signal disapproval of protrait endorsement. After pilot testing, we selected 30 items for inclusion in the questionnaire. Each item was endorsed on a 4-point scale with reversed items to control for response sets. Endorsement options were "disagree strongly," "disagree somewhat," "agree somewhat," and "agree strongly."

We conducted a factor analysis on the items, using principal-components analysis. Because of the distinction between primary and secondary psychopathy, a two-factor solution was obviously preferred; however, a scree test was also consistent with two factors. Thus, we solved

for two factors and used a .30 factor loading threshold criterion. No double-loading items were found. Four items were dropped because of low factor loadings or lack of endorsement variance. The factors are presented as the primary and secondary psychopathy scales in Table 1. We created scales using unit weighting after reversing items with negative factor loadings.

The antisocial action scale consists of 24 items that assess the frequency of antisocial behaviors that are typical of students. These items included prosocial behaviors, in part to control for response sets, which were reverse coded to contribute to the overall antisocial action score. Antisocial actions included cheating on exams, plagiarism, stealing, vandalism, getting drunk several nights a week, promiscuity, and being arrested for driving while intoxicated. Prosocial actions included lending money to other students, allowing other students to copy one's lecture notes, tutoring students who are having a hard time in class, doing volunteer work, being careful to return borrowed items, and driving carefully around bicyclists (bicycles are very heavily used in the Davis community). Four endorsement options were provided, including "I have done this never, once or twice, a few times, or frequently." We also assessed grade point average (GPA).

Four 10-item subscales from the Zuckerman (1979) Sensation Seeking Scale (Form 4) assessed disinhibition, boredom susceptibility, expe-

rience seeking, and thrill and adventure seeking, with two dichotomous pro- and contrait statements per item. The Stress Reaction and Harm Avoidance scales are subscales of the Multidimensional Personality Questionnaire (MPQ, Tellegen, 1982). The former is held to be a measure of trait anxiety and the latter to be a measure of fearfulness of physical danger, which Lykken hypothesized to be specifically relevant to psychopathy (Lykken, Tellegen, & Katzenmeyer, 1973; Tellegen & Waller, in press). The Stress Reaction scale consists of 14 self-descriptive statements, scored as true or false. Nine of the 26 Harm Avoidance items are also true-false, and the remaining 17 Harm Avoidance items are dichotomous statements in a format identical to that of the Sensation Seeking Scale.

Univariate statistics, including reliabilities (standardized item alphas) for all scales, are presented in Table 2. Reliabilities ranged from .59 for boredom susceptibility to .87 for harm avoidance. The alpha coefficient for primary psychopathy was a robust .82. The .63 alpha for secondary psychopathy is probably acceptable for a 10-item scale. No item deletions would have improved the reliability coefficient.

Results

Although protrait endorsement of psychopathy, especially primary psychopathy, items was, as expected, a low-base-rate

Table 1
Items and Factor Loadings in the Primary and Secondary Psychopathy Scales

| Item | Factor loading |
|--|----------------|
| Primary Psychopathy | |
| 1. Success is based on survival of the fittest; I am not concerned about the losers. | .67 |
| 2. For me, what's right is whatever I can get away with. | .62 |
| 3. In today's world, I feel justified in doing anything I can get away with to succeed. | .62 |
| 4. My main purpose in life is getting as many goodies as I can. | .62 |
| 5. Making a lot of money is my most important goal. | .61 |
| 6. I let others worry about higher values; my main concern is with the bottom line. | .59 |
| 7. People who are stupid enough to get ripped off usually deserve it. | .57 |
| 8. Looking out for myself is my top priority. | .52 |
| 9. I tell other people what they want to hear so that they will do what I want them to do. | .44 |
| 10. I would be upset if my success came at someone else's expense. | -.50 |
| 11. I often admire a really clever scam. | .50 |
| 12. I make a point of trying not to hurt others in pursuit of my goals. | -.41 |
| 13. I enjoy manipulating other people's feelings. | .39 |
| 14. I feel bad if my words or actions cause someone else to feel emotional pain. | -.33 |
| 15. Even if I were trying very hard to sell something, I wouldn't lie about it. | -.33 |
| 16. Cheating is not justified because it is unfair to others. | -.32 |
| Secondary Psychopathy | |
| 1. I find myself in the same kinds of trouble, time after time. | .62 |
| 2. I am often bored. | .51 |
| 3. I find that I am able to pursue one goal for a long time. | -.49 |
| 4. I don't plan anything very far in advance. | .48 |
| 5. I quickly lose interest in tasks I start. | .48 |
| 6. Most of my problems are due to the fact that other people just don't understand me. | .46 |
| 7. Before I do anything, I carefully consider the possible consequences. | -.36 |
| 8. I have been in a lot of shouting matches with other people. | .34 |
| 9. When I get frustrated, I often "let off steam" by blowing my top. | .33 |
| 10. Love is overrated. | .32 |

Table 2
Scale Descriptives

| Scale | <i>M</i> | <i>SD</i> | Reliability |
|------------------------------|----------|-----------|-------------|
| Stress Reaction | 7.35 | 3.73 | .86 |
| Harm Avoidance | 15.84 | 5.87 | .87 |
| Disinhibition | 3.60 | 2.55 | .75 |
| Boredom Susceptibility | 2.55 | 1.97 | .59 |
| Experience Seeking | 4.95 | 2.17 | .61 |
| Thrill and Adventure Seeking | 7.36 | 2.81 | .78 |
| Primary Psychopathy | 29.13 | 6.86 | .82 |
| Secondary Psychopathy | 19.32 | 4.06 | .63 |
| Antisocial Action | 32.24 | 4.70 | .70 |

phenomenon in this university undergraduate population, there was sufficient endorsement even on these items to permit interpretation. Most psychopathy item endorsement was in the form of "agree somewhat" rather than "agree strongly." Examples of primary items and endorsement frequencies are: "I would be upset if my success came at someone else's expense" (19% disagreed somewhat, 4% disagreed strongly); "For me what's right is whatever I can get away with" (8% agreed somewhat, 2% agreed strongly); "I let others worry about higher values; my main concern is with the bottom line" (16% agreed somewhat, 2% agreed strongly); "Success is based on survival of the fittest; I am not concerned about the losers" (14% agreed somewhat, 1% agreed strongly); "Even if I were trying very hard to sell something, I wouldn't lie about it" (23% disagreed somewhat, 5% disagreed strongly); and "Cheating is not justified because it is unfair to others" (15% disagreed somewhat, 7% disagreed strongly). Examples of secondary items and endorsement frequencies are: "I find myself in the same kinds of trouble, time after time" (33% agreed somewhat, 4% agreed strongly); "I am often bored" (30% agreed somewhat, 4% agreed strongly); and "I find that I am able to pursue one goal for a long time" (16% disagreed somewhat, 3% disagreed strongly). Endorsement rates on the primary and secondary scales were normally distributed (skewness = 0.27 and -0.04; kurtosis = -0.41 and 0.43, respectively), which is consistent with a continuous rather than a dichotomous interpretation of psychopathy. Twenty-three percent of male respondents endorsed 8 or more of the 16 primary psychopathy items, whereas only 6% of the female respondents did so. The distribution of responses to the antisocial action scale were slightly skewed toward the low-protrait endorsement of antisocial action items (skewness = 1.04; kurtosis = 5.45).

A multivariate analysis of variance revealed sex differences on all scales except experience seeking (see Table 3). Men were much higher than women on primary psychopathy and were considerably higher on antisocial action, boredom susceptibility, and thrill and adventure seeking but were only marginally higher on secondary psychopathy. Women scored much higher than men on harm avoidance.

The correlation matrix for all scales is presented in Table 4. As hypothesized, primary and secondary psychopathy were strongly correlated with disinhibition and boredom susceptibility but were not at all correlated with the Experience Seeking or Thrill and Adventure Seeking subscales. Both psychopathy scales were positively correlated with antisocial action. Again,

as hypothesized, secondary psychopathy was a highly significant correlate of stress reaction (trait anxiety), but primary psychopathy was only slightly (but positively) correlated with it.

The Harm Avoidance scale was negatively correlated with all of the other variables except for GPA, secondary psychopathy, and stress reaction. It was uncorrelated with the former two and moderately, positively correlated with the latter. Harm avoidance was most strongly negatively correlated with thrill and adventure seeking. It was also significantly negatively correlated with primary psychopathy and antisocial action, although those were the two smallest significant negative coefficients.

Thrill and adventure seeking was modestly negatively correlated with stress reaction and was also correlated with disinhibition and boredom susceptibility. However, it was not at all correlated with primary psychopathy, secondary psychopathy, or antisocial action. Secondary (but not primary) psychopathy was negatively correlated with GPA. Antisocial action and stress reaction were modestly negatively correlated with GPA.

We performed stepwise regression analysis with backward elimination to determine the strongest predictors of antisocial action in this sample. Six significant predictors were found (see Table 5). In descending order of beta weight, they were: disinhibition, primary psychopathy, sex, secondary psychopathy, and boredom susceptibility, with thrill and adventure seeking entering the equation negatively. Together, these predictors accounted for 30% of the variance.

Because of the strong sex differences on most of the predictive scales, we conducted separate regressions for men and women. For men, disinhibition and primary psychopathy remained the strongest predictors of antisocial action, whereas the beta for thrill and adventure seeking increased to $-.146$ compared with $-.089$ for the overall sample. Because of considerably reduced sample size, its t value was only a trend ($p < .07$). These three scales accounted for 28% of the variance. For women, disinhibition, primary psychopathy, and secondary psychopathy were the strongest predictors, but the relationship with antisocial action was weaker than for men, accounting for 19% of the variance.

Table 3
Multivariate Analysis of Variance Examining Sex Differences in Scale Scores

| Scale | Men (<i>N</i> = 133) | Women (<i>N</i> = 338) | Univariate <i>F</i> |
|------------------------------|--------------------------|----------------------------|------------------------|
| Stress Reaction | 6.47 | 7.90 | 14.96*** |
| Harm Avoidance | 12.84 | 17.21 | 64.00*** |
| Disinhibition | 4.44 | 3.35 | 18.44*** |
| Boredom Susceptibility | 3.40 | 2.28 | 33.40*** |
| Experience Seeking | 4.99 | 5.02 | 0.02 |
| Thrill and Adventure Seeking | 8.27 | 7.11 | 18.09*** |
| Primary Psychopathy | 32.96 | 27.67 | 64.64*** |
| Secondary Psychopathy | 20.04 | 19.03 | 5.35* |
| Antisocial Action | 34.59 | 31.32 | 51.08*** |

Note. Wilks's lambda = .72, $F(9, 461) = 19.51$, $p < .001$.

* $p < .05$ *** $p < .001$.

Table 4
Zero-Order Correlations Among Scales in the Study ($N = 487$)

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------------------|---|--------|--------|---------|---------|---------|---------|---------|---------|--------|
| 1. GPA | — | -.14** | .07 | .01 | -.10* | .09 | -.03 | -.08 | -.23*** | -.11* |
| 2. Stress Reaction | | — | .20*** | .04 | .09* | -.04 | -.12* | .09* | .41*** | .05 |
| 3. Harm Avoidance | | | — | -.31*** | -.30*** | -.28*** | -.50*** | -.17*** | -.05 | -.15** |
| 4. Disinhibition | | | | — | .42*** | .38*** | .30*** | .34*** | .16** | .37*** |
| 5. Boredom Susceptibility | | | | | — | .20*** | .19*** | .39*** | .27*** | .33*** |
| 6. Experience Seeking | | | | | | — | .48*** | -.04 | -.02 | .05 |
| 7. Thrill and Adventure Seeking | | | | | | | — | .01 | -.04 | .01 |
| 8. Primary Psychopathy | | | | | | | | — | .40*** | .44*** |
| 9. Secondary Psychopathy | | | | | | | | | — | .29*** |
| 10. Antisocial Action | | | | | | | | | | — |

Note. Scales 2 and 3 are from the Multidimensional Personality Questionnaire (Tellegen, 1982); Scales 4–7 are from the Zuckerman Sensation Seeking Scale (Zuckerman, 1979). GPA = grade point average.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The pattern of correlations suggests that the primary and secondary psychopathy scales are promising instruments for the assessment of these constructs in unselected populations. The correlation between the primary psychopathy scale and antisocial action is especially interesting. Disinhibition and boredom susceptibility were correlated with primary psychopathy and antisocial action and were significantly but less strongly associated with secondary psychopathy. Although disinhibition and boredom susceptibility were fairly strongly correlated with both thrill and adventure seeking and experience seeking, the latter two were not at all correlated with either primary or secondary psychopathy. In other words, the variance shared by thrill and adventure seeking and disinhibition does not overlap that shared by primary psychopathy and disinhibition, thus discriminating psychopathy from a global sensation seeking construct. The strong association of disinhibition and boredom susceptibility, and the lack of association of thrill and adventure seeking and experience seeking with both primary and secondary psychopathy replicates, in a noninstitutionalized population, Levenson's (1990) findings among institutionalized offenders. The theoretical importance of this finding concerns the impression that the subscales of the Sensation Seeking Scale reflect at least two distinct types of behavioral disinhibition. This is not consistent with the hypothesis that psychopathy re-

sults from a deficit in a unitary BIS, such as that posited by Gray (1982) and Fowles (1980). Because the functioning of BIS is held to be experienced as anxiety, the lack of negative association between primary psychopathy and stress reaction (a measure of trait anxiety) and its weak negative correlation with harm avoidance is also inconsistent with the BIS hypothesis.

Secondary psychopathy was significantly correlated with primary psychopathy and with antisocial action. As hypothesized, secondary psychopathy was positively correlated with the measure of trait anxiety, whereas primary psychopathy was only weakly correlated with it. Indeed, this was the only pronounced difference between the correlates of the two scales. The most parsimonious interpretation of this finding is that the psychopathic interpersonal philosophy can be adhered to by people who are emotionally unstable as well as by those who are emotionally stable. At the same time, it supports Karpman's (1948) distinction between the primary psychopath and the neurotic, secondary psychopath and demonstrates the importance of assessing these two constructs separately, even though pure primary or secondary types may be relatively rare.

The Harm Avoidance scale was negatively correlated with scales that were strongly related to psychopathy (e.g., Disinhibition) and with scales that were not at all correlated with psychopathy (e.g., Thrill and Adventure Seeking). It was only modestly negatively correlated with primary psychopathy itself. This suggests that harm avoidance has little discriminant validity in this context. As Lykken et al. (1973) reported, Borkovec (1970), Hare (1972), and Schmauk (1970) were all unable to discriminate psychopathic from nonpsychopathic criminals on the basis of the Activity Preference Questionnaire—the original, longer form of the Harm Avoidance scale. However, the above-mentioned authors speculated that this may be due to an established relationship between “faking good” and higher anxiety scores. This speculation is not strongly supported by the present evidence of only a modest correlation between the Harm Avoidance and Stress Reaction scales of the MPQ. The very large sex difference in the Harm Avoidance scale means does suggest that the scale is effectively assessing aggregate differences between men and women on this construct.

The other very large sex difference in the study, that between

Table 5
Significant Predictors of Antisocial Action Using Stepwise Regression With Backward Elimination

| Predictor | <i>b</i> | <i>SE</i> | β | <i>t</i> |
|------------------------------|----------|-----------|---------|-----------|
| Sex | -1.788 | .444 | -.172 | -4.031*** |
| Secondary psychopathy | 0.134 | .049 | .116 | 2.717** |
| Boredom Susceptibility | 0.201 | .108 | .084 | 1.858* |
| Disinhibition | 0.436 | .083 | .236 | 5.273*** |
| Thrill and Adventure Seeking | -0.155 | .072 | -.089 | -2.155* |
| Primary psychopathy | 0.156 | .033 | .227 | 4.764*** |

Note. $R^2 = .303$, $F(6, 464) = 33.63$, $p < .001$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

scale means in primary psychopathy, is subject to more than one possible interpretation. On the one hand, it may be that a cold, "tough" attitude toward others is emphasized in the socialization of men but not of women. On the other hand, women may have learned not to acknowledge such attitudes even if they actually hold them. In this connection, it is interesting that the difference between men and women on secondary psychopathy was quite small.

Multiple regression analysis with backward elimination found that, in descending order of strength, disinhibition, primary psychopathy, sex, secondary psychopathy, thrill and adventure seeking (negatively), and boredom susceptibility were significant predictors of antisocial action and accounted for 30% of the variance. The predictive value of disinhibition for antisocial action in the present study is consistent with an earlier study of institutionalized antisocial men (Levenson, 1990). The Disinhibition subscale of the Zuckerman (1979) Sensation Seeking Scale is composed of sex, drugs, partying, and general social-stimulation-proneness items that are quite different from the uncaring, selfish, and manipulative primary psychopathy items and the impulsive, self-defeating secondary psychopathy items. Although a small portion of the strong relationship between disinhibition and antisocial action may be due to items specific to sex and drinking in both scales, this cannot have been decisive, because only 3 of the 24 items in the antisocial action scale related to these behaviors. Deletion of any of these items decreased the scale's reliability to about the same degree as deletion of any of the other items. The somewhat weaker predictive value of boredom susceptibility for antisocial action is also consistent with the earlier study. These findings, along with the negative relationship between psychopathy and the Thrill and Adventure Seeking subscale, suggest that the Disinhibition and, to a lesser extent, the Boredom Susceptibility subscales, rather than the entire Sensation Seeking Scale, should be considered predictors of antisocial action and contributors to the overall psychopathy construct. The unrefined use of "sensation seeking" to characterize a psychopath (cf. Meloy, 1988), if used in a predictive context, is virtually certain to produce a great deal of Type I and Type II errors. This study lends further support to Levenson's (1990) conclusion that, contrary to Lykken's (1982) hypothesis, adventurous, relatively fearless people are not at greater risk for psychopathy than anyone else.

Separate multiple regression analyses conducted for men and women revealed a stronger negative relationship for men between thrill and adventure seeking and antisocial action than in the mixed analysis, even though the sample size was cut by almost two-thirds. This relationship for women was nonsignificant in a much larger sample. The regression accounted for less of the variance in antisocial action among women than among men. It is also noteworthy that secondary psychopathy continued to predict antisocial action for women but not for men. However, these analyses served to increase confidence in the predictiveness of disinhibition and primary psychopathy for antisocial action.

The apparent success of the new psychopathy scales suggests that self-report psychopathy instruments are not as useless as they may have appeared to be in the past. Hare (1986) is fully justified in his strong criticism of such scales for their nonspecificity and their lack of convergent validity. Also, institutional-

ized psychopaths may be far more likely than most others to try to tailor test results to certain desired outcomes (R. D. Hare, personal communication, 1993). However, if items are couched in language that does not signal disapproval of protrait endorsement (which can be termed an *antisocial-desirability* manipulation), people who are characterized by the attributes in question may well feel free to "own" them. After all, people with psychopathic interpersonal attitudes might be expected to also possess the meta-attitude that it is desirable to have such attitudes.

A more general consideration concerns the meaning of the kind of aggregate personality data on which this article is based. Lamiell (1987) observed that it is invalid to draw inferences about relationships among personality traits in individuals from relationships among such traits in aggregate data (cf. also Rorer, 1990). This observation is very well taken when the concern is exclusively with individual personality structure. However, it is also possible to take a valid interest in the prevalence of trait relations in a population. Thus, what one might call the *sociology of personality* may prove interesting to those of us who study personality and social psychology together. In the present study, there were certainly few if any full-blown psychopaths. However, to the extent that the items reflect a philosophy of interpersonal relations that psychopaths would be expected to share, even moderate levels of protrait endorsement in a "normal" population suggest that such a philosophy has a measure of popular currency. This may, in turn, encourage us to reflect on how such a philosophy is inculcated and to explore further the prevalence of antisocial behavior in the noncriminal population.

Willingness to endorse items that express antisocial attitudes was, as it was expected to be, a low-base-rate phenomenon in a student population. The endorsement rate for psychopathy items was also affected by the fact the sample contained more than twice as many women as men when men were much more likely than women to endorse these items. Psychopathy items were, nevertheless, endorsed by a surprisingly large number of participants. For example, 119 participants disagreed somewhat (92 participants, 18%) or disagreed strongly (17 participants, 4%) with the statement "I would be upset if my success came at someone else's expense," whereas a smaller, but not inconsequential, number endorsed the statement "For me, what's right is whatever I can get away with" somewhat (40 participants, 8%) or strongly (8 participants, 2%). Couching interpersonal callousness in terms of popular scientism seemed to encourage higher endorsement rates. For example, "Success is based on survival of the fittest; I am not concerned about the losers" found 68 respondents (14%) somewhat in agreement, but only 6 (1%) strongly agreed. This pattern held for all of the primary and secondary psychopathy items. The endorsement of these items was predominantly in the form "somewhat" rather than "strongly." This may actually constitute evidence for response validity, because it suggests that these were considered responses rather than playful deception. That 23% of the men in the study endorsed 8 or more of the 16 primary psychopathy items suggests the possibility of a significant risk factor for behavior that may entail considerable social cost. We hope that these apparent attitudes would be rejected by most on closer inspection or would "mature out" as these young adults have

more direct experience with consequences of antisocial behavior.

Why some people pursue a psychopathic "career" to such an extent that they come to be officially classified as psychopaths remains an intriguing question. Although a behavioral inhibition brain system deficit may not be the answer, other kinds of physiological contributors cannot be ruled out. For example, Hare and his colleagues have presented data that suggest that psychopaths are abnormally unresponsive to emotionally charged communication (Williamson, Harpur, & Hare, 1991). This has been interpreted to mean that psychopaths have a lower level of activity in brain systems that mediate emotion (Patrick, Bradley, & Lang, 1993). However, it is entirely possible that emotional unresponsiveness is learned. Such learning would be expected to lead to hypoactivity in these brain systems. Thus, studies of psychopaths' brain function can no more conclusively speak to the issue of causal directionality than can studies of their social attitudes. Other possibilities also must be considered, such as a diathesis-stress model, according to which biological disposition becomes effective only under certain kinds of circumstances, and a final common pathway model, in which different people become psychopathic as a result of different kinds of influences.

A controversial issue in the study of psychopathologies of all kinds concerns whether or not they are characterized by continuity or discontinuity with psychological dispositions that are found in the nondiagnosed population (Claridge, 1985). This issue has only recently been addressed regarding psychopathy. Harris, Rice, and Quinsey (1994), using taxometric analyses of PCL-R scores combined with other indicators, found evidence for discontinuity in psychopathy. However, their sample consisted exclusively of prisoners, and the taxon was identified predominantly by Factor 2 of the PCL-R and childhood problem behavior. If these two indicators reflect secondary rather than primary psychopathy, the latter is not necessarily tied to the former. Levenson (1992) argued that psychopathy—specifically primary psychopathy—is not a psychopathology at all. If secondary psychopathy is the psychopathology that puts people at major risk for imprisonment, as the strong relationship between APD and PCL-R Factor 2 suggests, there may well be a great deal of Factor 1 or primary psychopathy that exits with impunity, as it were, in the general population. People of this type would not be identified as belonging to the taxon of psychopathy as identified by Harris et al. (1994).

As Harris et al. (1994) acknowledged, taxa are not necessarily genetic in origin (Meehl, 1992). Moreover, as suggested above, in the final common pathway model there is no reason to rule out the possibility that taxon membership might be achieved by more than one means. The strong application of the meaning of taxa—that they are distinct natural entities—to psychopaths is likely to divert attention from the possibility of studying psychopathy as a process involving social psychological principles (Levenson, 1992). There is a danger of turning the study of psychopathy into a kind of teratology. The uncomfortably commonplace nature of most psychopathic attributes, especially those characterizing primary psychopathy, among members of elite groups might easily be overlooked.

There is an understandable tendency to attribute monstrous deeds accompanied by callousness, remorselessness, lying, and

failure to accept responsibility to a monstrous nature. This attributional tendency leaves one in mute incomprehension of how ordinary people, as well as respected leaders, can coldly perpetrate atrocities—as they regularly do—under a variety of circumstances and incentives.

The kinds of processes that are exemplified in Milgram's (1974) "obedience to authority" experiments can obviously overcome inhibitions against severely hurting others under the influence of incentives that might seem rather weak to an outside observer. One is reminded of one of Cleckley's (1988) criteria for psychopathy: "inadequately motivated antisocial behavior." Repeatedly overcoming such inhibitions (e.g., in gang activities) might well produce the callous disregard for the welfare of others that typifies a psychopath. A career psychopath would appear to be a laboratory where this kind of phenomenon can be studied in concentrated form. It is reasonable, however, to continue to examine the psychopathy construct in the general population just as it is useful to study, for example, the prevalence and correlates of paranoid ideation in nonclinical samples. It seems plausible that a psychopathic interpersonal style, even in a muted form, could be situationally amplified with destructive consequences. Moreover, whether psychopathy is learned, a biological taxon, sometimes one and sometimes the other, or a combination of the two, there can be no doubt that many people who would easily be classified as psychopathic are not and never have been in prison.

Future research should include cross-cultural studies of large noninstitutionalized samples, using the PCL-R to develop our knowledge of prevalence of psychopathic traits, possible cultural differences in prevalence, and of whether and in what ways the picture of noninstitutionalized psychopathy differs from that of its prison counterpart.

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